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25 November 1970

MEMORANDUM FOR: Deputy Director of Basic and Geographic Intelligence  
 SUBJECT : Requirements for Research and Development

A review has been made of Geography Division's priority needs in the field of intelligence research and development. The following are judged to be the most significant:

I. Requirements for substantive information:

A. Population (Priority 1)

This information should be detailed enough to permit a more valid description of distribution and density of population in any given area; information is needed on ethnic differentiations -- physical characteristics, language, dress, housing. Even more elusive is knowledge on religious affiliation, tribal affiliation, minority groups, attitudes, objectives, mores, and technical abilities. Some method is needed for applying this information to the population of particular urban areas to identify active or potential members of the urban insurgency.

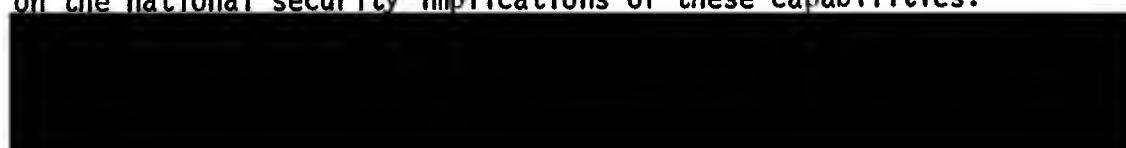
B. Food Supply (Priority 2)

Detailed information is needed on the distribution of different kinds of crops, their normal yield in an optimum growing period, the effect of weather and disasters on their yield, programs of innovation (Green Revolution). Growth areas, yield, and acreage of other significant crops with intelligence significance -- such as for narcotics -- are also needed. Maritime fisheries, pond culture of fish, and developments in synthetic protein must also be followed.

C. Oceanographic Information (Priority 1)

As underwater capabilities of the technically developed nations increase, so will the need for accurate intelligence on the national security implications of these capabilities.

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**D. Environmental Pollution Data (Priority 3)**

Issues involving pollution in the environment are increasingly likely to become sources of contention among nations. As they do, the lack of basic data, or the withholding of it, may become a serious problem.

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**II. Information collecting and processing requirements.**

**A. Photography (Priority 1)**

If increasing tensions or an upsurge in nationalistic forces enlarge the areas denied to our usual methods of information procurement, we will be forced to rely increasingly on aerial photography. In addition, photography may be the sole source of certain types of data, especially in underdeveloped areas. Procedures should be developed for identifying from photography the population characteristics enumerated above (number, distribution, housing) as well as less tangible characteristics such as loyalties and mores. If the anticipated uses of photography are to come to fruition, retrieval methods will need to be designed so that they will permit quick and accurate determination of which coverage is desired and provide copies immediately.

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Some type of rapid reconnaissance mapping photography for areas now available but likely to be denied is urgently needed. Good quality large scale topographic maps are not available for much of the underdeveloped world. Aerial photography holds the key to correcting this deficiency.

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A device [REDACTED] for use with aerial photography would facilitate identification of significant changes shown on the newer photography.

B. Computerized Data Base (Priority 2)

Development of a computerized geographic intelligence data base and a retrieval system with all area information coded by geographic coordinates or grid cells is needed. The development of a better optical character reader (OCR) for inputting the data is a critical bottleneck. There is a need for an OCR capable of handling all types of fonts, which will obviate the need to retype the data before inputting the file. The system should have the capability for storing and retrieving both quantitative and qualitative information by areas, [REDACTED]

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[REDACTED] and should incorporate the map-making capabilities of existing systems [REDACTED] An analyst in the Magazine Building should be able to remotely view the CIA Library's and Map Library's title-holdings on a topic of interest and by pressing a button on the console automatically place an order for a book or map, charge it to the particular analyst, and make possible the rapid delivery of the book to the analyst.

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[REDACTED]  
Chief, Geography Division

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